



Ready to roll

The crew of STS-37 is wrapping up extensive training for a challenging deployment and EVA mission. Photos on Page 3.



Big science

JSC is making its presence felt at the 39th annual National Science Teachers Convention in Houston. Story on Page 4.

Space News Roundup

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No. 13

Atlantis set to lift off one week from today

By James Hartsfield

Atlantis will launch one week from today at 8:18 a.m. CST on STS-37, managers announced Wednesday after a flight readiness review.

Atlantis will place the Gamma Ray Observatory in a 243 nautical mile orbit on the third day of the flight and will be home base for America's first spacewalk in more than five years on the next day.

Commanding the flight will be Steve Nagel. The pilot will be Ken Cameron. Mission

specialists are Linda Godwin, who will work Atlantis' mechanical arm to place GRO in orbit, and Jerry Ross and Jay Apt, who will perform the flight day four spacewalk to test prototype exterior transportation equipment designed for Space Station Freedom.

The crew is scheduled to depart JSC for Kennedy Space Center on Tuesday afternoon.



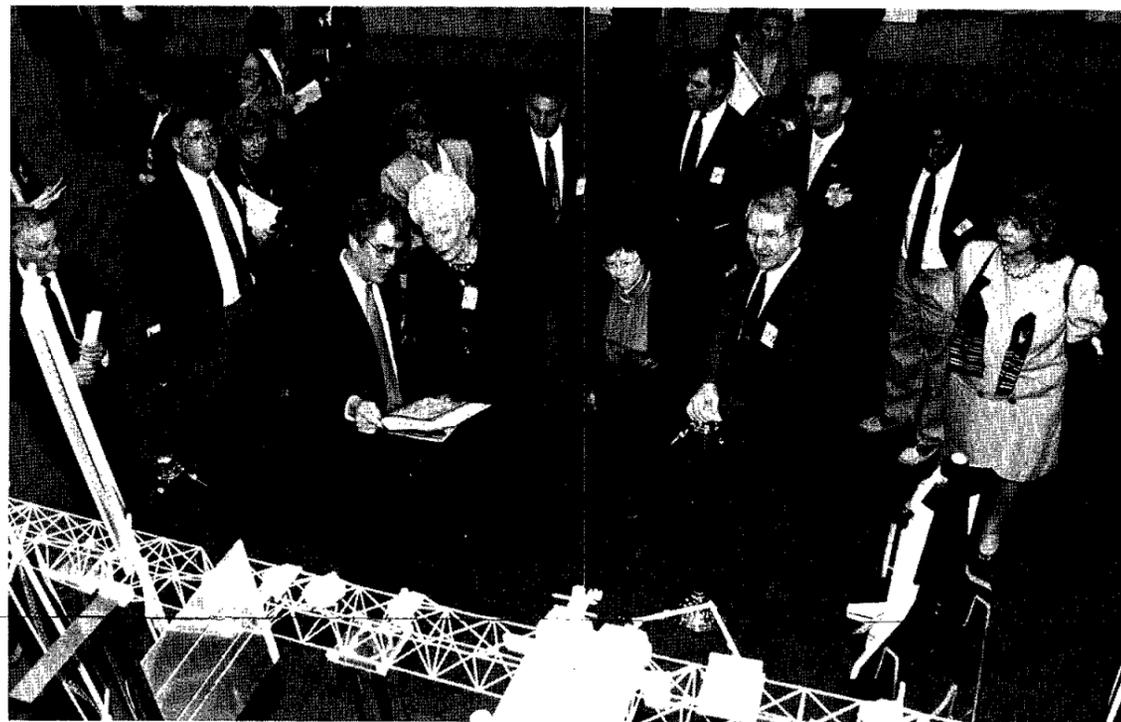
Space Station

came through right on schedule."

At Launch Pad 39B, Atlantis has been passing final checks of the main engines and other systems with flying colors this week.

Preparations for loading supercold liquid hydrogen and oxygen into the electrical generating system have been made, and hydrazine has been loaded for the auxiliary power units that provide power to the spacecraft's hydraulics. Yesterday, the spacesuits Ross and Apt will use were put in place in the airlock.

Meanwhile, Discovery was taken to the Vehicle Assembly Bldg. late Monday and reattached to the solid rockets and external fuel Please see DISCOVERY, Page 4



JSC Photo by Benny Benavides

Space Station Projects Office Manager John Aaron points out details of a Space Station Freedom model for Texas Gov. Ann Richards and Sen. Barbara Mikulski during a Monday visit to JSC's Bldg. 9B. Sen. Jake Garn, NASA Administrator Richard Truly and JSC Director Aaron Cohen were among those who escorted them.

Senator says space station can be funded

By Kelly Humphries

The head of the Senate subcommittee that oversees NASA's purse strings said during a Monday visit to JSC that she believes Congress will approve multi-year funding for the restructured space station.

Sen. Barbara Mikulski, D-Md., who chairs the Senate Appropriations Subcommittee on VA/HUD and Independent Agencies, said that while the restructuring limits Space Station Freedom's capabilities in the beginning it allows the station to "grow as we go" and eventually support human exploration of the solar system.

Mikulski toured JSC facilities with Texas Gov. Ann Richards and former shuttle payload specialist Sen. Jake Garn, R-Utah, for much of the day Monday. Their visit included tours and briefings in the Mission Control Center, the space station and space shuttle mock-ups and the Shuttle Mission Simulator Control Room.

Richards said she plans to push for the creation of a multi-city network of enterprise zones that will take advantage of economic development tools to attract additional aerospace firms to Texas.

"The Johnson Space Center is part of America's history and we want to

make sure that it's part of America's future," Mikulski said.

"It's nine years to the year 2000. A new millennium is about to be born," she added. "A new century is coming. A new economy is being born and we want to make sure the United States of America leads the way."

Mikulski said it was the Senate appropriations committee that asked NASA to restructure Space Station Freedom to make it scientifically desirable, technologically achievable and physically feasible.

"We think we now have a space station that can do that," she said. "We think we will be able to fund this station and fund it for several years to come."

Mikulski also said her visit here crystallized her understanding of the aerospace industry's importance to Texas economic development and education.

"This center is an important part of the Texas economy," Richards said. "NASA and its general contractors produce \$4 billion for the Texas economy every year."

She added that 24 Texas counties are home to more than 500 different aerospace firms receiving NASA

Please see RICHARDS, Page 4

We think we will be able to fund this station and fund it for several years to come.

—Sen. Barbara Mikulski

'We're not as good as we have to be'

Truly promotes quality ethic

By Kari Fluegel

Working together, NASA will make the dreams of Space Station Freedom and further exploration of the solar system a reality, Administrator Richard Truly said this week.

Speaking to employees via NASA Select TV on Tuesday, Truly congratulated civil service and contractor employees recently honored throughout the agency, but encouraged the pursuit of increased excellence.

"I don't know of a government organization that our tax dollars pay for that is more excellent than NASA," he said. "I see it in our centers. I see it when I look at our programs... I see it particularly in the people across NASA... But as good as we are, for an organization that has dreams as far reaching and exciting as ours, we're not as good as we have to be in the future."

"To put quality, quality, quality into

our work... is an effort for me, for the assistant administrators here at Headquarters, for your center directors and their deputies, the divisions and the directors for them, the branches, the section heads and you.

"Together we can put together a Total Quality Management approach to NASA's internal work that can change for the better the way that this agency does its business. I expect it

Please see TRULY, Page 4

Michener lauds scholarship's progress

Pulitzer Prize winner adds another \$25,000 to fund

Pulitzer Prize winning author James A. Michener said Saturday he is pleased with the quality of students receiving the benefits of the scholarship he endowed, and donated another \$25,000.

Michener and his wife, Mari, were honored for their contributions at JSC's Gilruth Center and had an opportunity to meet many of the NASA College Scholarship Fund Inc. students.

The scholarship fund was endowed by Michener in 1982 and since that time, financial assistance has been given to 18 students. Six of the recipients are working in doctorate programs.

"You have done a masterful job (of administering the program)," Michener said. "We follow it closely. We are

impressed by the character of the young people you have nominated. We are more than pleased with the wonderful results of their education in high school and college and advanced degrees... That is what young people of above average ability ought to do."

Michener presented a \$25,000 contribution to JSC Director Aaron Cohen for the scholarship fund.

"My wife and I are both children of the American education system," Michener said. "I went to nine universities, always at somebody else's expense. I was early on tagged as a bright, young boy and could get As in almost anything I took. That was in the period when you got an A for memorization. I was a dog for memor-

ization. But, upon real analytical intelligence which is required now, I doubt that I would have stood so high... I often say, I think with great truth, had I been born in some country like Yugoslavia, I would have spent my life counting gasoline drums because there would have been no free education. There would have been none of that early identification of a bright boy. There would have been none of that, and, we are constantly aware of that vast difference.

"So from a position of great satisfaction of what you people have done we are now going to increase the endowment... and I hope you do as well with this as you have done in the past."



JSC Photo by

Author James Michener, seated, poses with three of the scholarship winners whose college careers he has helped underwrite. From left are Erin McNutt, John Birmingham and Jennifer Muhonen, all dependents of Goddard Space Flight Center employees.

JSC

Ticket Window

The following discount tickets are available for purchase in the Bldg. 11 Exchange Gift Store from 10 a.m. to 2 p.m. weekdays.

General Cinema (valid for one year): \$4.
 AMC Theater (valid until May 1992): \$3.75.
 Loews Theater (valid for one year, can be used two weeks after premiere): \$4.
 Astroworld (valid 1991 season): season, \$44.94; children under 4 feet, \$10.12; one day, \$15.85; Waterworld, \$8.13.
 Seaworld of Texas (valid 1991 Season): children (3-11), \$12.25; adults, \$17.25.
 Deep sea fishing (7:30 a.m.-7:30 p.m. April 13, includes bait, tackle and crew): \$45 to fish; \$20 to ride.
 NASA Night at Astroworld (6 p.m. April 5, park closed to public): \$8 for first 5,000; \$10 for next 5,000.
 Rockets vs. Utah Jazz (7:30 p.m. April 6, Summit): \$5.50.
 STS-1 10th anniversary party (4:30-8:30 p.m. April 15, Gilruth): \$3.

JSC

Gilruth Center News

EAA badges—Dependents and spouses may apply for a photo I.D. 6:30-9 p.m. Monday-Friday. Cost is \$5.
Defensive driving—Course is offered from 8 a.m.-5 p.m., May 18, June 15 and July 13. Cost is \$15.
Aerobic dance—Eight-week session meets 5:15-6:15 p.m. Tuesday and Thursday nights. Cost is \$24.
Exercise class—Class meets 5:15-6:15 p.m. Monday and Wednesday nights. Cost is \$24.
Weight safety—Required course for employees wishing to use the Gilruth weight room. The next classes will be from 8-9:30 p.m. April 10 and April 25. Cost is \$4.
Country and western dance—Beginner only class meets 7-8:30 p.m. Friday nights for six weeks beginning April 5. Beginner or intermediate class meets Mondays from 7-8:30 or 8:30-10 p.m., respectively, for six weeks beginning April 22. Cost is \$20 per couple.
Fiction workshop—Classroom sessions meet for five weeks from 6:30-8 p.m. Wednesdays beginning April 3. After class readings will be from 8-10 p.m. Cost is \$80.
Aikido—Martial arts class meets from 6:30-7:30 p.m. Tuesdays for six weeks beginning April 2. Cost is \$30.
Ballroom dance—Ballroom dancing instruction will be offered in an eight-week session beginning May 2. Cost is \$60 per couple.
Scuba—Four-week course meets from 6:30-9:30 p.m. Thursdays. Cost is \$50 plus additional fees.

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Swap Shop ads are accepted from current and retired NASA civil service employees and on-site contractor employees. Each ad must be submitted on a separate full-sized, revised JSC Form 1452. Deadline is 5 p.m. every Friday, two weeks before the desired date of publication. Send ads to Roundup Swap Shop, Code AP3, or deliver them to the deposit box outside Rm. 147 in Bldg. 2. No phone or fax ads accepted.

Property

Sale: Oakbrook West, 4-2-2.5, formal LR/DR, FPL, lg kitchen, wet bar, new paint, ex cond, \$120K. 486-5220.
 Sale: Clear Creek Village, waterfront lot, 150' x 80', bulkhead, \$47K. Bill, x31167 or 333-9042.
 Sale: San Bernard River, waterfront home on piling, 3-2-3. 862-3929.
 Sale: Clear Lake 2-story condo, 1-1.5-CP, patio, balcony, all appli, FPL, \$38K assum. low pmts. 486-0508.
 Sale: Middlebrook, 3-2-2, cul-de-sac, new paint, carpet, and ceramic tile, new AC in '89, \$89K. 538-1051.
 Rent: El Dorado Trace condo, 2-2-CP, FPL, \$275 dep, \$500/mo. 486-8964.
 Lease: One BR condo, refrig, W/D, FPL, pool, lg walk-in closet. 283-6368.
 Lease: Pipers Meadow, 3-2-2, study, FPL, fans, fenced, over 1600 sq ft, \$795, avail Apr 1. Jon, 661-3430 or 282-5165.
 Lease: Alvin, 3-2-2 brick, blinds, Stainmaster carpet, new dishwasher, fenced, \$625/mo plus \$500 dep, avail May 12. 585-3468.
 Sale: Two water view lots near NASA, \$38.5K ea; bayfront lot on Todville, \$125K. Don, x38039.
 Rent: Friendswood area, enclosed RV storage stall, 40' deep, lights/pwr, reasonable rate. 482-9396.
 Rent: Galveston condo, furn, sleeps six, Seawall Blvd and 61st St, wknd/dly/wkly rates. Magdi Yassa, x33479 or 486-0788.
 Rent: Lake Tahoe condo, Stateline, NV, avail 1-8 July '91, furn, sleeps 6, \$420. 474-5610.
 Lease: Pebblebrook condo, 2-1.5 new paint, carpet, and blinds, FPL, all appli, W/D, \$475/mo plus dep. Lori, x34718 or 554-2801.
 Lease: Galveston condo, 2-1, all appli, FPL, covered parking, \$525. 289-8777.
 Sale: Bay Glen, 3 BR, study, marble and ceramic floors, mid \$120s. 486-3977.
 Sale: Lake Livingston, Westwood Shores lot, \$6000 OBO. x30032 or x31834.
 Sale: El Dorado Trace condo, lg 1-1.5, all appli, assum. Joyce, 286-1177.
 Sale: Dickinson, 75 Supreme Chaleit mobile home, 2-1.5, 12' x 60', \$7K, owner fin avail. x33139 or 534-2288.
 Lease: Oakbrook West, 4-2-2-2, formals, family rm, FPL, fans, new A/C, clean, fenced, no pets, \$975/mo. 488-5210.
 Rent: 23' Starcraft travel trlr, sleeps 4 adults, fully self contained, A/C, tub and shower, refrig, furn, \$250/wk. 943-1694.

Cars & Trucks

'80 Ford Mustang htbck, 2.3L, manual trans, \$800 OBO. Dan, 282-6968.
 '84 Volvo GL, 86K mi, ex cond, sun roof, pwr, auto, \$4995. David, 554-5514 or 282-3827.
 '81 Thunderbird, A/C, PS, PB, cruise, AM/FM/cass, runs good, \$900. Bob, 283-4146.
 '84 Volvo DL, loaded, 4 dr, auto, A/C, 75K mi, ex cond, \$5795 OBO. Suchart, 282-3529 or 488-4959.
 '77 Pontiac Grand Prix, sun roof, P/S, P/W, \$1500; '82 Ford van, 56K mi, ex cond, \$5K. x36604 or 482-7156.
 '84 Cadillac Sedan DeVille, 47K mi, loaded, \$7000 OBO. 333-3429.
 '78 Chevy Nova, 250 6 cyl, auto, A/C, pwr str/brakes, 80K mi, \$795. x32796 or 534-4742.
 '77 Chev Monte Carlo, 350 V8, 115K mi, A/C, AM/FM/cass, new tires/trans w/1 yr warr, runs great, \$1500 OBO. Mark, x37491 or 335-1494.
 '87 Ford Tempo GL, black w/red int, 4 dr sedan, 75K mi, ex cond, \$4000. 538-1051.
 '83 Ford Country Squire wagon, good cond, BO. Dan, 481-3056.
 '84 Buick Skylark sedan, 6 cyl, auto, A/C, clean,

\$2200. 482-1659.
 '79 Triumph Spitfire 1500 convertible sportscar, \$2750. 331-3954.
 '83 Nissan, 4 dr, auto, loaded, ex cond, 83K mi, \$2900. 333-2717.
 '81 Nissan 310, 2 dr, ex cond, A/C, sun roof, AM/FM, \$1250. John, x36486 or 488-2276.
 '82 Chrysler LeBaron, good cond, \$1880. Manuel, x38326.
 Ford Probe Turbo GT, 5 spd, 100K mi warr, ex cond, \$11,750 OBO. Dan, 280-2780 or 457-2850.
 '78 Alfa Romeo Spider, red, good cond, \$4500. Jeff, 333-7062 or 482-8585.
 '85 Ford Bronco, 4WD, new eng/trans/paint, auto, A/C, AM/FM, \$5400. 337-2671.
 '82 Pontiac Bonneville wagon, ex cond, all pwr, cruise, tilt, AM/FM/cass, V8, A/C, \$1600 OBO. Glenn, x38067 or 484-4709.
 '82 Chev S10 for parts, V6 eng; '74 Chev 1 ton truck, 350 eng for parts; '79 Ford F250, 400M eng for parts. 332-1811.
 '85 Honda Accord LX, 4 dr, auto, 52K mi, recent A/C, paint and brakes, ex cond, \$5250. 488-2990.
 '88 Mazda 323 SE, 47K mi, A/C, AM/FM/cass, sun roof, new tires, \$4300. x31027 or 332-8743.
 '83 Porsche 928S, 57K mi, auto, sun roof, loaded, ex cond, \$15K. Gloria, 480-0235 or 485-7555.
 '79 Ford Fairmont, rusty, runs great, \$600 OBO. 471-2885.
 '87 Nissan Sentra, 2 dr, 5 spd, A/C, AM/FM/cass, tint, 75K mi, ex cond, \$3000. Steve, x35450 or 480-1658.
 '57 Porsche Speedster kit car, high perf eng and trans, \$10.5K. David, 332-9044 or 929-7012.
 '88 Dodge Grand Caravan SE, V6, auto, dual air/heat, PS, PB, 7 pass seating, cruise, tilt, 2 capt chairs, roof rack, 38K mi, \$11,875. 326-1775.
 '89 Buick Regal GS, V6, AT, PS, A/C, sun roof, AM/FM/cass, cruise, 16K mi, \$10K. 538-1107 or 280-2592.

Cycles

'80 Honda 750 CB, good cond, 26K mi, \$600. 337-1896.
 Boy's Schwinn Thrasher bicycle, 20 in, \$60. 283-5465 or 332-1725.
 Two girl's bicycles, ex cond, sz fits 6 and 9 yr old, good qual, \$50 ea. x33149 or 488-7036.
 CB 1000 frame w/forks, front and rear wheels, asstd parts, \$150. x32578 or 488-2543.
 '81 Honda 650cc CB, new tires/batt, windshield, back rest, good cond, \$850. Gene, x36424 or 474-4289.
 '81 Honda 750 Custom Windjammer, radio, back rest, low mi, good cond, \$650 OBO. Bruce, 485-0396.
 '83 Suzuki RM80, new top end, beginners bike, \$300 OBO. 532-3395.

Boats & Planes

'72 17' Larson runabout w/recently overhauled Johnson 60 hp, \$700. 326-2784.
 Training water skis w/rope, \$40; child's life jackets, 1 sm, 1 med, \$10 ea. David, x36090.
 '86 25' McGregor sailboat, 3 sails, AM/FM/cass, marine VHF, enclosed head, 7 6 hp Mariner OB, trlr, ex cond, \$7500. Kevin Walters, 486-6411 or 532-2181.
 '19' IB/OB Crestline boat, ex cond, 165 hp. 862-3929.
 '17' Coleman canoe w/paddles, ex cond, \$300 OBO. 282-4839 or 554-7601.
 Windsurfers, 2 beginner to intermediate boards w/sails, \$250 ea or \$400 for both. Larry, 996-0158.
 '17' Ouachita aluminum canoe, \$400. 474-4663.
 '17' Ouchita aluminum canoe, \$400. 474-4663.
 25 hp Evinrude, elec start, new, \$1700. Jerry Craig, 283-5311 or 420-2936.
 '79 Renegade 1540 ski boat, 140 hp Evinrude, SST prop, custom trlr, new seats, carpet, paint, ign sys, 45 plus mph, \$2500 OBO. 333-6868 or 486-7846.
 '87 galv tandem axel boat trlr, \$650. x31226 or 534-3710.

Audiovisual & Computers

Apple IIe 128K computer, dual disk drive, 80 col, w/SW, incl SAT, math, English and games, was \$1695, now \$795. Liam, 282-3841 or 484-3211.
 Motorola 2 way low band radio, FM 1 channel MOCOM 70s radio, incl all parts and antennas. Howie, 282-3841 or 482-3985.

JSC

Dates & Data

Today

Cafeteria menu—Special: meat sauce and spaghetti. Entrees: baked scrod, liver and onions, fried shrimp. Soup: seafood gumbo. Vegetables: green beans, buttered broccoli, whipped potatoes.

Monday

Lockheed NMA meets—The Lockheed National Management Association will present a brown bag luncheon at 11:40 a.m. April 1 in the Lockheed Plaza 4, Rm. 44F. "False Economic Ideas and Their Origins," will be the topic. For more information contact Charles Campbell at 333-6107.

Cafeteria menu—Special: wieners with baked beans. Entrees: beef chop suey, breaded outlet with cream gravy, grilled ham steak. Soup: beef and barley. Vegetables: buttered rice, Brussels sprouts, whipped potatoes.

Tuesday

Cafeteria menu—Special: pepper steak. Entrees: fried shrimp, pork chop with applesauce, turkey a la king. Soup: celery. Vegetables: au gratin potatoes, breaded squash, buttered spinach.

Wednesday

Astronomy seminar—The JSC Astronomy Seminar will hold an open discussion meeting at noon April 3 in Bldg. 31 Conference Rm. 129. For more information contact Al Jackson, 333-7679.

Cafeteria menu—Special: Mexican dinner. Entrees: fried catfish with

hush puppies, braised beef ribs. Soup: seafood gumbo. Vegetables: Spanish rice, ranch beans, buttered peas.

Thursday

Cafeteria menu—Special: hamburger steak with onion gravy. Entrees: corned beef with cabbage and new potatoes, chicken and dumplings, tamales with chili. Soup: split pea. Vegetables: navy beans, buttered cabbage, green beans.

April 5

Cafeteria menu—Special: barbecue link. Entrees: deviled crabs, broiled codfish, liver and onions. Soup: seafood gumbo. Vegetables: buttered corn, green beans, new potatoes.

April 8

Lockheed NMA meets—The Lockheed National Management Association will present a brown bag luncheon at 11:40 a.m. April 8 in the Lockheed Plaza 4, Rm. 44F. "Why the Japanese Have Been so Successful," will be the topic. For more information contact Charles Campbell at 333-6107.

April 9

USSF symposium—The United States Space Foundation will hold its seventh National Space Symposium April 9-12 at the Broadmoor Hotel, Colorado Springs. For more information call (719) 550-1000 or fax (719) 550-1011.

April 10

Astronomy seminar—The JSC

Astronomy Seminar will hold an open discussion meeting at noon April 10 in Bldg. 31, Rm. 129. For more information contact Al Jackson, 333-7679.

April 11

NPMA dinner meeting—The JSC National Property Management Association will meet at 5 p.m. April 11 at the Gilruth Center. Coleman S. Moore, president of the Clear Lake City Chamber of Commerce, will speak. For more information contact Sandra Pierce 282-4151.

April 15

STS-1 anniversary—JSC will mark the 10th anniversary of the first space shuttle mission with a crew return celebration from 4:30-8:30 p.m. at the Gilruth Center. Tickets are \$3 and go on sale March 21 at the JSC Exchange Store. Call Ginger Gibson at x30596 or Cyndi Draughton at x30494 for more information.

April 17

Astronomy seminar—The JSC Astronomy Seminar will be at noon April 17 in Bldg. 31, Rm. 129. Astronaut Jeff Hoffman will discuss the Astro-1 mission. For more information contact Al Jackson, 333-7679.

April 21

Spring concert—The Bay Area Chorus will present a spring concert at 3 p.m. April 21 at United Methodist Church of Pasadena. Tickets are available by calling 684-6030.

Swap Shop

Hedaka internal modem for PC, 2400 baud, Hayes compat, w/BITCOM SW, \$70; Epson LQ printer, new ribbon, \$150. x37137 or 482-8966.
 JVC GX-NTU video camera w/character generator, tele lens, shotgun mic, case; G.E. portable VCR, w/ 2 batts and case; roll about tripod, light, and custom equip, \$650 for all; G.E. portable VCR w/1 batt, car cord, 5" color TV/monitor, \$300; or all the above for \$900. 326-1303.
 IBM XT clone, 640K, 30 MB HD, 2 FD, color monitor, \$850. Cheryl, x33958 or 438-6008.
 Leading Edge 12" amber monitor, model DR-1240, new, \$65. George, x31275 or 486-0315.
 AT&T 6300 PC, FD, 20 MB HD, mouse, modem, all ports, ex cond, \$675 OBO. Jon, 661-3430.
 640K IBM compat, books/boxes, 150 floppies, SW, 20 MB HD, 360K FD, Herc mono graphics 8087 copr, \$500; 200 watt pwr supply, \$40; ext 5.25 case, \$5; 3.5 to 5.25 adaptor, \$5; VGA board, 512K 1024 x 768, \$75. Jeff, x32578 or 488-2543.
 Brother HR-15XL daisy wheel printer, ex cond, \$50. x38039.
 Sony AM/FM/CD car stereo, Harmon Kardin graphic eq, Sanyo 100 watt amp, sell sep or together. Eddie, x34580.
 Apple IIc, 12" monitor, ext drive, 300/1200 modem, mouse and SW incl Home Accountant, \$600. 538-1479.
 AT&T cassette answering machine and Panasonic telephone, \$50. Ron, x30887 or 334-7530.
 Mono VGA monitor, 12", \$80; sm footprint keyboard for XT, \$25; need cheap 19" color TV. Charlie, x34754 or 554-7116.
 Two Ultimate box speakers w/8" sub-woofer, 3 mo old, \$100. Oma, x30367.
 Cerwin-Vega HED-15 high efficiency speakers, 100W, \$250 OBO. Steve, 333-3176 or 282-4108.
 Macintosh SE/30, 16MHz clockspeed, 5MB RAM, 40 MB HD, 1.4 MB internal FD, imagewriter color printer, 2400 baud modem, \$3000 OBO. Dan, 335-2523 or 286-5610.

Full sz elec dryer, used 4 mo, ex cond, \$175 OBO. 474-5976.
 New icemaker kit for Frigidaire refrig/freezer, \$50. Ben, x30755 or 486-2633.
 Brown corduroy sofa and loveseat, ex cond, \$150 OBO. 282-4839 or 554-7601.
 Octagon table w/glass top and 4 cushioned chairs, all chrome, \$100. 326-5865.
 Mini blinds, various sz and color, \$8 ea; lg Armana Spacesaver microwave oven, needs repair, BO; lg ugly, comfy chair, \$10. Edward, x36250.
 Century DR furn, ex cond. 333-3254.
 New lg couch w/loveseat, oak frame, \$600; glass top table w/4 upholstered chairs, \$300 OBO; 3 pc sec sofa w/pillows, ex cond, \$800; 3 pc oak BR suite, 8 drwr vanity w/mirrors, 4 drwr dresser w/shelves/doors head brd matt, box spring, \$600 OBO. Diana, 996-0130.
 Rollaway bed, 3/4 sz, \$50. x36080 or 482-5621.
 New Presto 6 qt elec Kitchen Kettle plus crockery, \$20; Rival Crock-ette 1 qt slow cooker, \$9. Kyle, x38628.
 G.E. washer/dryer, ex cond, \$280 OBO. x38385.
 Imperial heavy duty commercial upright freezer, 2 yrs, ex cond, 19.3 cu ft, was \$1200, now \$700. x35495.
 Super single waterbed w/innerspring mattress, 12 drwr storage, bookcase/mirror headboard, \$175; three solid wood designer gold leaf LR tables, \$250, x30972 or (409) 935-5688.
 Solid oak contemporary Child Craft baby bed, \$150; 15 cu ft Kenmore upright freezer, \$200; bentwood rocker, \$30; stereo receiver w/speakers, \$25. 480-3325.
 Antique green BR suite, full sz bed, mirrored dresser, 5 drwr chest, 2 night stands, \$675; G.E. dishwasher w/Pot Scrubber, built-in, almond, needs repair, \$60. Magdi Yassa, x33479 or 486-0788.

Wanted
 Want used go cart in running cond. 282-5282 or 554-6831.
 Want sm inexpensive desk. Nina, x31612 or 488-0664.
 Want '75 Volvo 240 w/manual trans, running, \$500, not running, \$200. Mike, x38368 or 333-3012.
 Want non-smoking roommate for 1 rm in Webster 3 BR, pet OK, \$250 plus 1/3 util. Ken, x34368 or 280-0802.
 Want mountain bike in good cond, radial arm saw, 10" or larger. x37121 or 332-9608.
 Van pool riders needed from Sugar Land, West Wood Mall, Fondren and Loop 610 Park and Ride to JSC area. Alice, x35234.
 Want child's playhouse in good cond, 941-4208.
 Want motorized treadmill in good working cond. Joel, x33857 or 894-8021.
 Want roommate to share CL Bayglen 3-2.5-2, \$300/mo plus 1/2 util. 282-32-15 or 480-9448.
 Want fem, non-smoking roommate to share Piper's Meadow 2-2-2, \$300/mo plus 1/2 util. Tracy, x32526 or 486-3946.
 Want old mechanical wrist watches, any cond, x30186.
 Want van pool rider for 3 mo, March-May, from Loop 610 Post Oak Park and Ride to JSC. x37232.
 Want Macintosh Plus, SE or Classic. 280-8796.

Musical Instruments
 Tascam 4 track recorder, \$300. Jim, 333-7690 or 488-4820.

Lost & Found
 Bracelet found in Bldg 15 parking lot, 3-12-91, identify. 554-6094.

Pets & Livestock
 Black lab, 1 yr old, male, trained, good with children, regis, \$150. 474-9435.
 Easter bunnies, choice of mini-lops or New Zealand, Gailo, 554-6200.
 Sorrel gelding, 5 yr old, beautiful and healthy, \$700. 554-6138.
 Siberian husky, AKC, fem, spayed, almost 3 yr, red/white, \$50. 488-5009.
 Lg English springer spaniel, liver and white, AKC, ex cond, no small children. Earl or Geri, 481-6729.
 Shepard mix, 4 mo old puppy, black with white under chin, house trained, shots. 280-2772 or 946-0010.

Photographic
 Pentacore 6-120 format SLR camera, made in Germany, 2 Carl Zeiss lenses, 80mm, 50mm, \$300. Kevin Walters, 486-6411 or 532-2181.
 Two Canon AEI cameras w/1.8f lens, 1 Vivitar 285 and 1 Canon Speedlite flash, numerous filters, will sell all or pieces, BO. Ron, x30887 or 334-7530.

Household
 Loveseat and chair, silver w/brn and blue flowers, \$175 OBO; DR table w/4 chairs, \$125. 337-1896.
 Rust colored, full sz Hide-A-Bed, \$125. 333-4101.
 Square coffee table, \$50; karate uniform w/kick shoes, \$10. Nina, x31612 or 488-0664.
 Queen sz water bed w/sheets, \$100. x38891.
 Queen sz water bed, semi motionless, new heater, \$160. Howie, 282-3841 or 482-3985.
 Two Sealy Posturpedic Exceptionale Platinum twin sets, super lux firm, BO; two plush La-Z-Boy rocker/recliners, earth tones, muted striping, ex cond, BO; Reguilli pants presser/coat rack, 160 watt elec heater, BO. Ed, x36615.

Toyota knitting machine, BO. Pat, x33106.
 Ridgetway 10' x 12' dome tent, used twice, was \$255, now \$125; diamond cluster wedding set, was \$1500, now \$800; waterfall 1/2 carat dinner ring, was \$550, now \$200; blue sapphire birthstone ring, \$100. 488-6733.
 Aluminum guttering, 4 pc, total 60 ft, plus some downspouts, free. 333-3071.
 X.K.Ka. Microrota radar detector w/3yr service policy, was \$300, now \$150. Howie, 282-3841 or 482-3985.
 Weight bench, incline w/leg extension and squat rack, \$25 OBO. 286-5106.
 Tennis rackets, professionally strung, wood w/ clamp, \$20; other wood w/clamp, \$15. Samouce, x35053 or 482-0702.
 Man's gold and diamond ring. Liz, 283-0439 or 486-3991.
 Michael Wolverton prints, framed, signed and numbered, \$100 ea. Larry, 996-0158.
 Drafting table w/slide bar, 24" x 36", storage cabinet underneath, \$40. 474-4663.
 Wedding dress, gloves, hat, and shoes, all sz 8, cream colored, short sleeves, tea length, Southern Belle style, \$130. Sheryl, 481-4889.
 '68 Buick Skylark shop manual; weightlifting bench w/weights. 944-0493.
 Two President & First Lady gold charter memberships. 488-0619.
 Wilson Staff Gooseneck golf clubs, 3 thru PW, \$225 OBO. Mike, 480-8835.
 Wheel w/Bridgestone tire, 185/70SR14, good cond, fits '85 Toyota Celica GT, \$40 OBO. Youm, 283-4813.
 Vacation account for 6-8 people at 4-star resort for one wk, pick time of yr and area of country, will exchange limeshare to match, \$675; Component stereo, \$250; Dazey Plus crockpot, \$20; 4 drwr dresser, \$25; queen sz waterbed matt, \$30; hi-back rocker, \$50; 2 10-spnd man's bicycles. Tim, 996-9191.
 Renaissance 4' x 8' pool table, all wood, detailed, leather pockets, ex cond, \$750. x30389 or 286-1235.
 Man's medium full wetsuit, ex cond, 2-pc, farmer John plus long sleeve upper, pockets and extra padding, \$90; solid brass paperweight, 12" high windsurfer, \$12. 486-8716.
 Academic American Encyclopedias, includes atlas, 12 vol. children's library, 5 vol. science, 2 cookbooks. Lea, 333-7306 or 554-2364.
 Three Chevy 4X4 16" rims, one w/12-15 LT 31" mud tire, \$150; B&D car vacuum, \$5; gauge set, temp, amps, oil, \$10; '79 Ford truck rear window, \$30; quartz elec heater, \$20; Kenmore upright vacuum, \$40; wedding dress w/veil, \$100. Susan, x30660 or 488-2543.
 Pool Vac automatic pool vacuum sys, 1 yr old, \$250; ladies bridal set, including diamond cert, was \$2000, now \$1500 OBO. x33814 or 486-5126.
 New PVC quilting frame, 27" x 36" x 31", table style w/snap-on top pcs, carry/storage bag, stores to 9" x 9" x 35". 332-3185.
 Matching loveseat and recliner; couch; solid oak entertainment center, coffee table and TV stand; butcher block table w/bench and chairs; Snapper riding mower w/access, \$1200; metal storage bldg, 10' x 12', \$700; microwave, \$80. Keith, 332-0048.
 Whirlpool heavy duty dryer, 3 mo old, \$225; Aerodynamic bug guard '89-'90 Ford Ranger, \$25; Hammond aluminum louvers '85-'86 Mustang, \$45. Eddie, x34580.
 15 rolls of new 6' chain link fence, \$40/roll, can deliver; Snapper riding mower w/heavy duty eng and cart, \$950 OBO; old player piano, BO; used hot tub, 8' md, \$250; new fiberglass shower/tub, \$50; 2-dr refrig, G.E. elec 30" stove w/microwave, apt washer, full sz W/D, used dishwasher, BO. 332-1811.
 Coleman camper, \$4800; enclosed trlr, 5' x 5' x 8', \$800; 19' Flying Scott sailboat, \$2800. Phil, 282-3600 or 471-1471.
 Chevy bow tie slant plus heads for sm block eng, ex cond, \$500. Bruce, 485-0390.
 Four Crager Hurricane rims, 6 holes, lug locks, 8 mo old, were \$500, now \$250. Oma, x30367.
 Aquariums, 1 55 gal 16" x 11" x 51", leaks, \$55 OBO; 1 15 gal hexagon w/u.g. filter, \$35; bird cages, 2 3' x 1' x 1', \$15 ea. 471-2885.
 Peach lace over peach satin, tea length formal, low back w/sash, sz 11/12, was \$200, now \$100. Cathy, x30415.



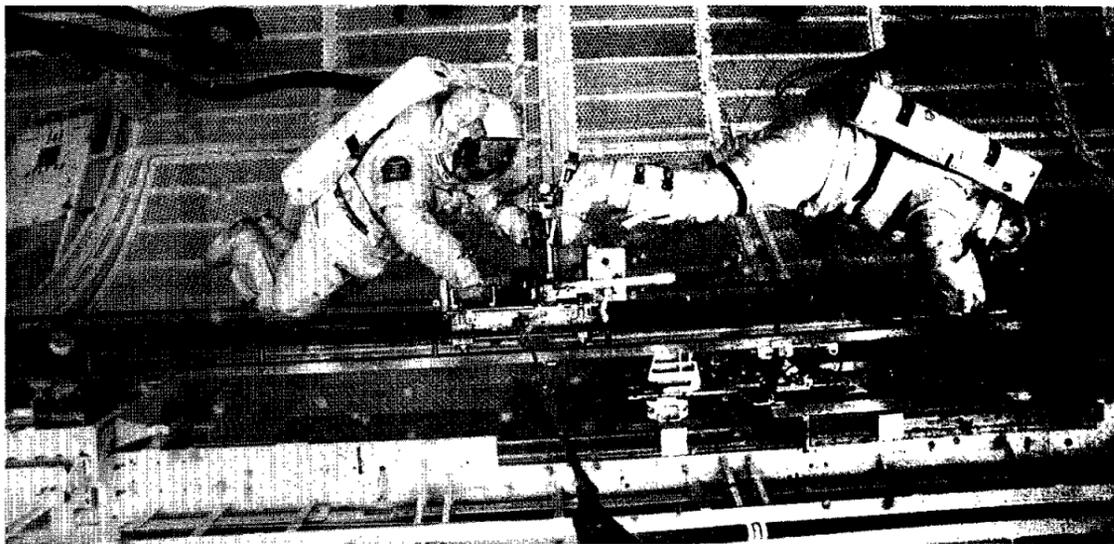
STS-37 COUNTDOWN



The STS-37 crew is scheduled for launch aboard *Atlantis* possibly as early as April 5 carrying the Gamma Ray Observatory. The orbiting observatory is designed to remain in space and study short-wavelength gamma rays in hopes of uncovering clues to the nuclear processes that transform matter and energy into celestial sources.

During the upcoming flight, two crew members also will conduct the first spacewalk since 1985. This spacewalk will demonstrate the feasibility of moving around Space Station *Freedom's* truss structure using a gliding track to reduce astronauts' workload.

In preparation for the five-day flight, crew members have undergone extensive training.



Clockwise from top left:

1) Mission specialist Jerry Ross suits up in an extravehicular-mobility unit to practice procedures in the Weightless Environment Training Facility using the Crew and Equipment Translation Aid. Ross' and fellow mission specialist Jay Apt are the designated extravehicular activity crewmen.

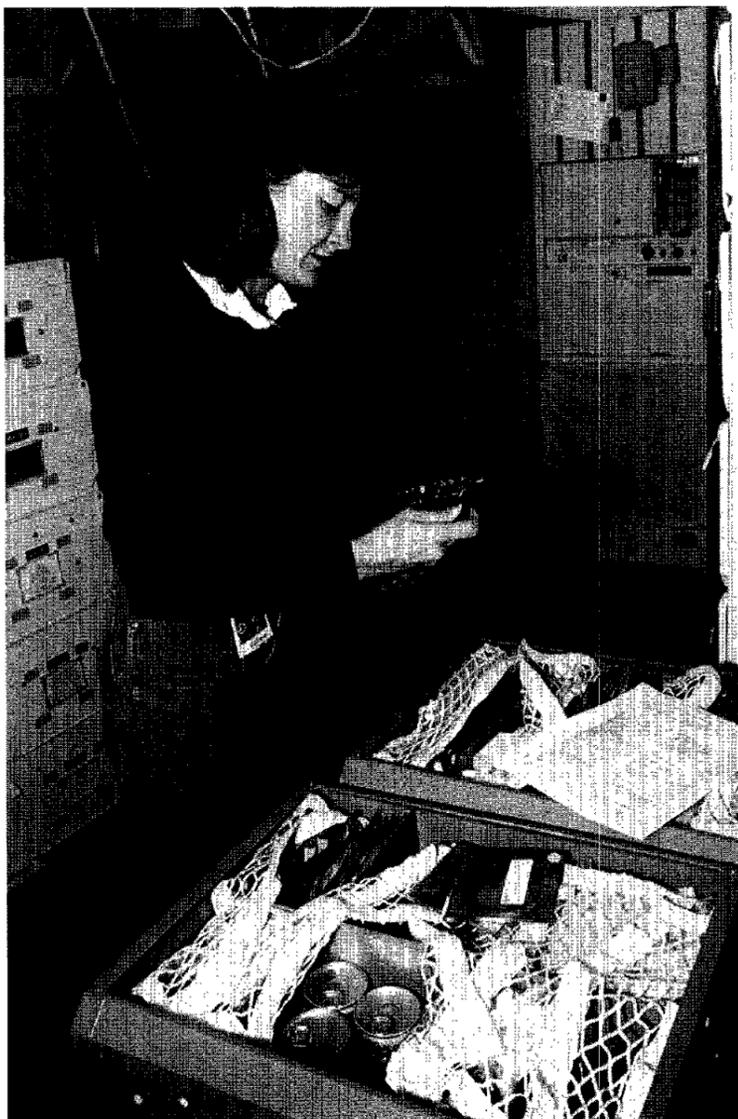
2) Also preparing to slip into the water in Bldg. 29's WETF is Jay Apt who will make his first flight into space.

3) The STS-37 crew, from left, Apt, Ross, Mission Specialist Linda Godwin, Pilot Ken Cameron and Commander Steve Nagel brief the news media on the flight.

4) An overhead photograph shows Ross and Apt practicing underwater in the WETF on the CETA hardware.

5) Nagel confers with Ross during an unsuited simulation in the Bldg. 5 fixed-base simulator.

JSC Photos by Andrew Patnesky



Lowrimore elected Woman of Year

JSC's Carolyn B. Lowrimore has been elected Woman of the Year by the Clear Lake Area Chapter of the American Business Women's Association.

Lowrimore, a program analyst in the Space Shuttle Program's Management Integration Office, was selected on the basis of her work achievements, education, community activities and participation in the association.

She is eligible to compete for the 1991 Top Ten Business Women of ABWA and the American Business Woman of the Year award.

She joined JSC in 1980 after 18 years with the Federal Bureau of Investigation, and has also worked in the Propulsion and Power Division of JSC's Engineering Directorate.

She was ABWA chapter president in 1988-89.

JSC People

Braymer leads human resources development

Susan A. Braymer has been appointed chief of the Human Resources Development Branch in the Human Resources Office.

Braymer succeeds Harvey Hartman, who became director of Human Resources earlier this year.

Braymer joined JSC in March 1985 as a personnel management specialist and more recently as a lead PMS.

Before coming to JSC, she served with the U.S. Customs Service as acting Southwest Region personnel officer and chief of its Employment Branch.

She has held various human resources management positions with the Office of Personnel Management, Veterans Administration, Environmental Protection Agency and Department of Defense.

Covey deputy chief in Astronaut Office

Astronaut Richard O. Covey has been designated acting deputy chief of the Astronaut Office while James F. Buchli is training for his next flight.

Covey, who most recently commanded STS-38, will help oversee the activities of the astronaut office until Buchli's return.



Lowrimore



Braymer



Covey



Kochner

Buchli is training for his spot as a mission specialist on STS-48, the Upper Atmosphere Research Satellite mission scheduled for November.

Kochner elected to co-op group's board

Jack Kochner, JSC's Cooperative Education coordinator, has been elected to the board of directors for the Cooperative Education Association Inc.

He will serve as employer representative for Region 5.

Kochner has been JSC's coordinator since 1983. The alternating work study program, primarily for engineering students but also for business majors, includes 215 students with 75 currently at work.

The program provides a pool of graduates from which NASA may select experienced full-time employees.

KSC breaks ground for Space Station Processing Facility

Kennedy Space Center broke ground Tuesday on a new \$56 million Space Station Processing Facility.

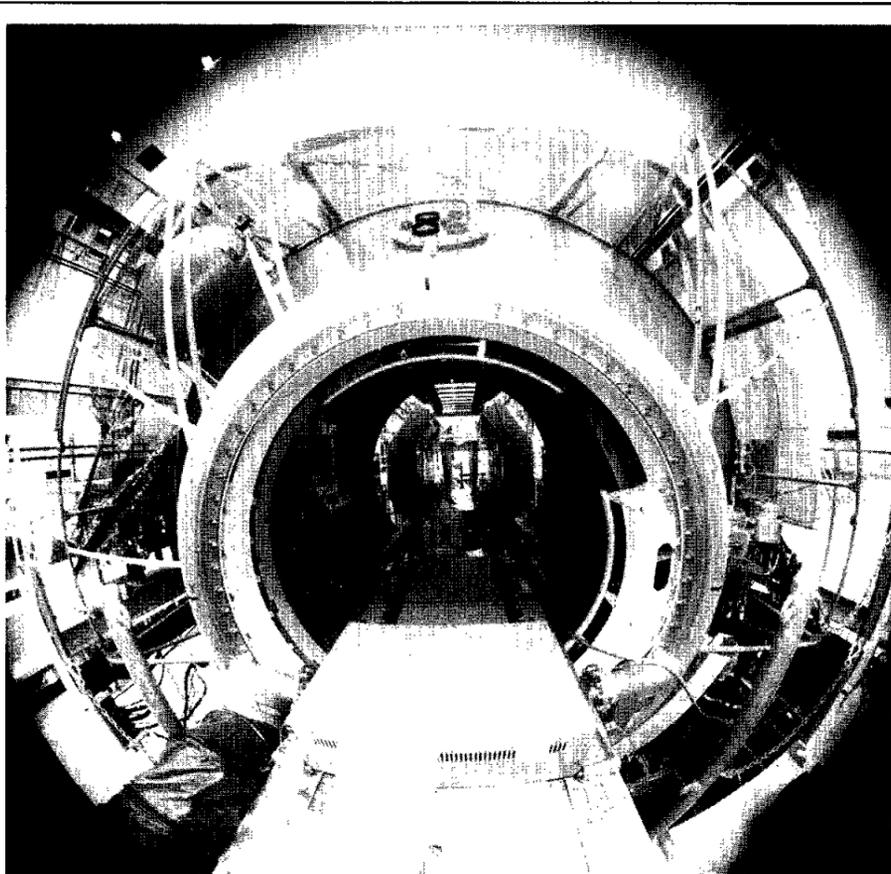
The 457,000-square-foot structure just east of the Operations and Checkout Bldg. in the KSC industrial area will be a three-story, multi-function building housing laboratories, control rooms, staging areas, communications and control facilities, and office space for nearly 1,000 NASA and contractor employees.

Expected to be open by 1994, it is the largest construction project begun at KSC since the Apollo era. Metric Constructors Inc. of Tampa is the prime contractor.

"There are a lot of people who thought we weren't going to make it to this ceremony today, and I'm glad that we're here," said Space Station Program Director Richard Kohrs.

"It would be hard to over-estimate the significance of this," said William Lenoir, NASA associate administrator for space flight. "This is real, we're going to turn it into concrete and steel and in the late 1995 timeframe, we want to be out of here, on the pad and ready to launch the first assembly flight of the space station."

"This, like the space shuttle, is a facility that we will continue to operate for decades and decades, and it's all going to start here at the processing facility," Lenoir added.



MICROGRAVITY MACHINE—A Kennedy Space Center technician installs rows of experiment racks in the International Microgravity Laboratory in the Operations and Checkout Bldg. IML-1, scheduled to fly on STS-42 in early 1992, will turn the shuttle into a laboratory dedicated to investigating the effects of microgravity on materials and life processes.

NASA Photo

NASA prominent at convention for science teachers

NASA and JSC are highly visible participants in this week's National Science Teachers Association convention at George R. Brown Convention Center in Houston.

The agency covers nearly a fourth of the convention display floor space, staffing 65 booths and providing 36 major exhibits. The three-day gathering, which concludes Saturday, is drawing about 15,000 elementary, high school and university science teachers.

About 375 volunteers from JSC's Engineering, Human Resources, Flight Crew Operations, Public Affairs, New Initiatives and Space and Life Sciences directorates set up displays and demonstrations for teachers.

Astronaut Mae Jemison, scheduled to fly on the STS-48 Spacelab-J mission in September 1992, was the speaker at the President's Annual Banquet on Thursday. Former astronaut Joe Allen, president of Space Industries Inc., will speak at the Space Science Luncheon today.

The convention is having a pronounced impact on visitor traffic at JSC. About 320 conventioners were expected to visit the center on special guided bus tours, and about 900 were expected to take self-guided tours.

JSC's Public Services Branch coordinated NASA's participation and worked closely with the exhibitors from JSC, Headquarters and other centers, said Louis Parker, deputy Public Services Branch chief.

"I was pleasantly surprised how smoothly everything went together, given the number of organizations involved," Parker said.

The Engineering Directorate set up displays from the Engineering Expo, including a box where teachers could see how it feels to work with space suit gloves and small flight simulators where teachers could try their hands at the controls.

Space and Life Sciences explained the wide range of its activities at JSC, and displayed plans for the Space Station *Freedom* Health Maintenance Facility. New Initiatives' Technology Utilization Office explained how space technology spins off into devices and materials used on Earth.

The Human Resources Office told teachers about co-op, summer intern and employment programs that might be of interest to their students. Members of the astronaut corps explained crew training and mission activities, and offered the Education Working Group's new "Liftoff to Learning" series of videotapes.

JSC Education Specialists Jim Poindexter (who served on the convention's program committee), Norma Kersman and Tommie Walton assisted in the Headquarters education booth by providing printed material. Stella Luna transformed one of the booths into a Teacher Resource Center that shared information about activities teachers can use in their classes.

"NASA is an education agency," said Dr. Robert Fitzmaurice, JSC's newly selected Center Education Programs Officer. "I know we don't think of it that way, but when we look at NASA's goals to explore the universe and to bring back knowledge from space, that knowledge ultimately will be shared with the public, in particular education groups. We're telling the story of space."

Truly predicts strong support for space station

(Continued from Page 1)

of you, I can't do it by myself. But together I'm absolutely convinced that you and I and other leaders at NASA can make a difference and make those dreams come true."

President George Bush's 1992 budget request is in Congress and represents a 13 percent increase to \$15.7 billion, Truly said. About 99 percent of the request, however, supports current programs, and the remainder will fund the early development of a new launch system, he explained.

Congressional hearings have started, and seem to focus on NASA's response to the Committee on the Future of the U.S. Space Program led by Norman Augustine, Space Station *Freedom* and educational issues, Truly said.

"You can expect certainly some ups and downs as the year goes by but I think that you will see this year that NASA is supported not only clearly by the White House and the

President but by the Congress and therefore the people as we show them we can do our job for the country."

Regarding the recently announced restructuring of Space Station *Freedom*, Truly said the redesign represents outstanding effort by everyone involved. He also said the proposal is garnering support from NASA's international partners and Washington politicians, including Vice President Dan Quayle.

"It is clear that the future of the American space program is inextricably linked to the building of the space station," Truly read from a letter received from Quayle. "The space station will, therefore, be more than a science facility and a microgravity lab, more than a training facility and more than a life science laboratory. The ultimate mission of the space station will exceed the sum of these areas."

"President Bush and I (Quayle) are prepared to make the commitment to build a permanently manned space station in this decade,"

Quayle's letter said.

Truly also discussed important milestones facing NASA in the next few weeks including the three shuttle missions and the first extravehicular activity in five years. The EVA, Truly said, is in support of the space station project.

"Space station is not something that is years and years away," he said. "You are going to see more and more effort in our flight program as we prepare for it."

Also in April, *Endeavour* will be delivered.

"It will be rolled out on target, on schedule, on cost and with a lot of improvements from the previous orbiters that we will later retrofit in the other orbiters," he said.

Truly also added that he was looking forward to the 10th anniversary of STS-1. Truly served as backup pilot for the mission.

"It led us into an era of space shuttle operations that you ought to be awfully proud of no matter where in NASA you were."

Richards 'committed' to Texas aerospace

(Continued from Page 1)

grants and contracts. The existence of JSC creates about 30,000 Texas jobs and NASA has a \$12 million annual impact on the state's universities.

"I am personally committed to protecting and enlarging this vital industry," Richards said. "If we had a 5 percent increase in the aerospace industry in Texas, we would generate almost a quarter of a billion dollars in new economic activity."

Richards said she will support the development of a space enterprise

network that has been proposed by Rep. Ashley Smith that will use special tax incentives, bonding authorities for construction of new facilities, workforce and data training programs, technology transfer programs and coordinated research development to attract more aerospace companies.

She also said she would talk to the Texas Higher Education Coordinating Board about the feasibility of establishing a space science engineering degree program at the University of Houston-Clear Lake. Mikulski, who voiced enthusiasm

for the upcoming STS-40 Space Life Sciences-1 mission, said the space station will be an important microgravity and life sciences laboratory, and will foster cooperation with the country's international partners.

She also said she is pleased that the new design will allow for expansion to support future human missions to the Moon and other planets.

"Once it's up there, first with a manned capability and then a permanent manned station, we will be able to grow as we go so that eventually it could be used for a launch pad into space."

Space News Roundup

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Editor Kelly Humphries

Associate Editors Pam Alloway
Kari Fluegel

Discovery ready to roll

(Continued from Page 1)

tank for STS-39. *Discovery* is slated to roll to Launch Pad 39A on Monday. A launch of STS-39, the first unclassified Department of Defense-dedicated flight, could occur as early as April 25.

Columbia remains on track for a late May launch on STS-40, carrying the Spacelab Life Sciences-1 module. The Spacelab module has been installed in *Columbia*'s payload bay, and is in the process of being fully connected to the spacecraft and thoroughly checked out this week. Other work on *Columbia* has included checks of the orbital steering jets and larger orbital maneuvering system engines.